

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:**Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-001333**Date Inspected:** 20-Jul-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 600**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1400**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Xiu Zhai Gu**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** OBG and Tower Mock-up**Summary of Items Observed:**

CALTRANS Quality Assurance (QA) Inspector, Alfredo Acuna was present for the fabrication scheduled for this project at the ZPMC facility in Shanghai, China for the San Francisco Oakland Bay Self Anchored Suspension Bridge.

The QA inspector observed ZPMC welding operator Do Ting Rui performing welding operation in the flat 1 G position on the 89 M Tower Mock-up. The QA inspector performed random verifications of the welding parameters. The QA inspector found that the welding parameters appeared to be in compliance with the contract documents. However, the QA inspector found that the interpass temperature exceeded the maximum of 230 ° C. at the last meter of the weld. The QA inspector brought to the attention of QC representative Lay Tao. ZPMC agreed and stopped the welding at the area in question. ZPMC wait that the temperature cools down and restarted welding later.

The QA inspector had a conversation with Caltrans QA inspector Larry Viars. Mr. Larry Viars informed that he observed two cracks at the junction of fitting lugs to diaphragm on the 89 M tower mock-up; the QA inspectors asked Mr. Lay Tao about the cracks. Mr. Lay Tao said to the QA inspectors that the QC inspectors found three cracks earlier and that ZPMC QC was going to document the cracks welded last night so the Technical Department submit them for approval of the Engineer. Later, in random inspections Mr. Larry Viars discovered 3 more cracks that ZPMC had not recorded. See TL _6031 from Mr. Larry Viars on this date for more details. Note: Cracks were found while the fabrication was in process.

The QA inspector had a conversation with ZPMC QC representative Mr. Xu Jun. Mr. Xu Jun informed that

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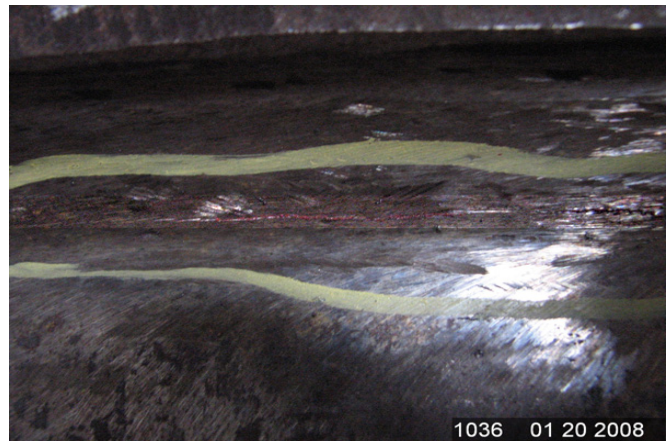
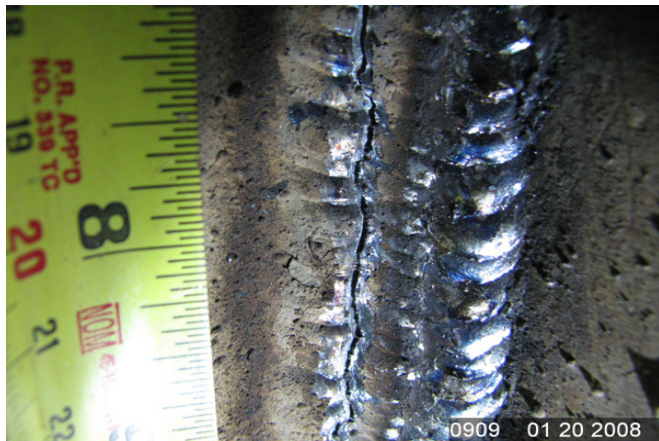
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ZPMC was having limited access performing magnetic particle testing (MT) on the fillet weld at the corner plate attached to the skin # C to D at the 77 M Tower Mock-up weld joint # 26, 27 and 28. The QA inspector recommended to ZPMC to perform MT the weld joints mentioned above. ZPMC QC technician Cai Xin Xin performed MT verifications at the weld joint mentioned above. Mr. Cai Xin Xin found the welds acceptable. The QA inspector observed a crack welds at the junction of the fitting lug to the diaphragm SA-104, weld joint # 36 with approximately 130 mm of length. The QA inspector confirmed with MT method. Mr. Xu Jun agreed with Caltrans representative assessment. Mr. Xu Jun informed that all the cracks on the welds will be properly documented and submitted to the Engineer for approval.

The QA inspectors discovered a total of 4 of 8 cracks at the junction of fitting lugs to diaphragms and fitting lugs to longitudinal stiffeners on Tower Mock-up 89 M (7 cracks) and 77 M (1 Crack).

Note: In the Tower Mock-up 89 M, was found cracks at the junction of the longitudinal stiffeners. See photos of the cracks; this joint was welded with 7018 electrodes (TL 508) which are not delivered in hermetically seal containers.

An incident report was issued due to ABF had allowed ZPMC to produce unsatisfactory welds that do not meet the minimum requirements for mock-up fabrication. Cracks, as defined by AWS D1.5, were found at numerous locations at the junction of the fitting lug to the longitudinal stiffeners. Weld numbers A/J 17, A/J 25, A/J 29, G/J 21, G/J 25 G/J 29 and G/J 44 on the Tower Mock-up 89 M and two locations at the junction of the fitting lug to diaphragm SA 104, joint # 36 and diaphragm to longitudinal stiffeners weld joint # 22 Tower Mock-up 77 M. These items are not in compliance with the Special Provisions, Section 10-1.59, "Fabrication/Erection Procedure and Mock-Ups", Page 313, paragraph B.1.



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Item Description	WBS	Dwg No.	Status
1 MT to the Floor Beams			
At the end of the shift, the QA inspector observed that ZPMC was performing magnetic particle testing (MT) to the floor beams FB-002-03-001, FB-002-03-018, FB-015-01-009 and FB-001-03-012. The QA inspector had a conversation with Lay Tao. The QA inspector asked why ZPMC did not inform the QA inspector with ZPMC schedule for witnessing the MT. Mr. Lay Tao informed that he informed Caltrans yesterday that ZPMC was going to be performing MT verifications for at least two days.			

Summary of Conversations:

As noted above.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

Inspected By:	Acuna,Alfredo	Quality Assurance Inspector
Reviewed By:	Cuellar,Robert	QA Reviewer
